AMENDMENTS TO THE CLAIMS:

The following listing of claims supersedes all prior versions and listings of claims in this application:

LISTING OF CLAIMS:

1. (Currently Amended) A magnetic resonance imaging apparatus for providing MRA image data without use of contrast agent, said apparatus comprising:

an RF coil unit which transmits RF pulses toward a subject, and which receives an MR signal from the subject in the absence of contrast agent in said subject;

gradient magnetic field coils which generate gradients in a superposed background magnetic field B_0, said gradients being generated in respectively different spatial directions and including (a) a gradient magnetic field for slice selection, (b) a gradient magnetic field for phase encoding, and (c) a gradient magnetic field for frequency encoding~~, respectively~~;

an arithmetic unit which generates MRA image data based on the MR signal including a subtraction image related to a systolic phase and a diastolic phase on the basis of the MR signals acquired during the systolic phase and the diastolic phase; and

a sequence controller which controls the phase encoding gradient magnetic field coils to generate magnetic gradient flow pulses for dephasing or rephasing MR spin of a

blood flow within said subject in the same <u>spatial</u> direction as the phase encoding gradient magnetic field.

2. (Previously Presented) A magnetic resonance imaging apparatus as in claim 1, wherein the flow pulses are flow compensation pulses or flow spoiled pulses.

3. (Currently Amended) A magnetic resonance imaging apparatus as in claim 1, wherein said sequence controller controls the frequency encoding gradient magnetic field coils to generate additional flow pulses in the same <u>spatial</u> direction as the frequency encoding gradient magnetic field.

4. (Previously Presented) A magnetic resonance imaging apparatus as in claim 3, wherein the first-mentioned flow pulses are flow compensation pulses, and the additional flow pulses are also flow compensation pulses.

5. (Previously Presented) A magnetic resonance imaging apparatus as in claim 3, wherein the first-mentioned flow pulses are flow spoiled pulses, and the additional flow pulses are also flow spoiled pulses.

6. (Previously Presented) A magnetic resonance imaging apparatus as in claim 3, wherein the first-mentioned flow pulses are flow spoiled pulses, and the additional flow pulses are flow compensation pulses.

7. (Previously Presented) A magnetic resonance imaging apparatus as in claim 3, wherein the first-mentioned flow pulses are flow compensation pulses, and the additional flow pulses are flow spoiled pulses.

8. (Previously Presented) A magnetic resonance imaging apparatus as in claim 1, wherein said sequence controller controls the slice selection gradient magnetic field coils to generate a slice encoding gradient magnetic field in the same direction as the slice selecting gradient magnetic field.

9. (Currently Amended) A magnetic resonance imaging method for providing MRA image data without use of contrast agent, said method[[,]] comprising:

transmitting RF pulses toward a subject while also applying a gradient magnetic field <u>in a first spatial direction superposed with a background magnetic field B_0</u> for slice selection in the absence of contrast agent in said subject;

generating a gradient magnetic field in a second spatial direction superposed with said background magnetic field B_0 for phase encoding;

generating a gradient magnetic field in a third spatial direction superposed with said background magnetic field B_0 for frequency encoding;

generating magnetic gradient flow pulses superposed with said background magnetic field for dephasing or rephasing MR spin of a blood flow within the subject in the same said second spatial direction as the phase encoding gradient magnetic field;

receiving an MR signal from said subject; and

generating MRA image data based on the MR signal in the absence of contrast agent in said subject including a subtraction image related to a systolic phase and a diastolic phase on the basis of the MR signals acquired during the systolic phase and the diastolic phase.

10. (Previously Presented) A magnetic resonance imaging method as in claim 9, wherein the flow pulses are flow compensation pulses or flow spoiled pulses.

11. (Currently Amended) A magnetic resonance imaging method as in claim 9, wherein additional magnetic gradient flow pulses are generated in the same said third spatial direction as the frequency encoding gradient magnetic field.

12. (Previously Presented) A magnetic resonance imaging method as in claim 11, wherein the additional flow pulses are flow pulses of the same type as the first-mentioned flow pulses.

13. (Previously Presented) A magnetic resonance imaging method as in claim 11, wherein the additional flow pulses are flow pulses of a type different than the first-mentioned flow pulses.

14. (Previously Presented) A magnetic resonance imaging method as in claim 9, wherein a gradient magnetic field for slice encoding is generated in the same direction as the slice selecting gradient magnetic field.

15. (Currently Amended) A magnetic resonance imaging method for providing MRA image data without use of contrast agent, said method[[,]] comprising:

executing a prep scan in the absence of contrast agent in said subject by a first pulse sequence which includes <u>magnetic gradient</u> flow pulses for dephasing or rephasing MR spin of a blood flow within a subject, together with RF pulses, a gradient magnetic field for slice selection, a gradient magnetic field for phase encoding and a gradient

magnetic field for frequency encoding, the <u>magnetic gradient</u> flow pulses of the first pulse sequence being generated <u>to produce a gradient</u> in <u>a background magnetic field B_0 oriented in</u> the same <u>spatial</u> direction as the phase encoding gradient magnetic field;

determining a condition of said <u>magnetic gradient</u> flow pulses based on an MR signal acquired by the prep scan; and

executing an MRA imaging scan in the absence of contrast agent in said subject by a second pulse sequence which includes <u>magnetic gradient</u> flow pulses corresponding to the determined condition, together with RF pulses, slice selecting gradient magnetic field, phase encoding gradient magnetic field and frequency encoding gradient magnetic field, the <u>magnetic gradient</u> flow pulses of the second pulse sequence being generated <u>to produce a gradient in the background magnetic field B_0 which is oriented</u> in the same <u>spatial</u> direction as said phase encoding gradient magnetic field.

16. (Previously Presented) A magnetic resonance imaging method as in claim 15, wherein in said second pulse sequence, a gradient magnetic field for slice encoding is generated in the same direction as said slice selecting gradient magnetic field.

17. (Previously Presented) A magnetic resonance imaging method as in claim 15, wherein a time integral value of intensities of said flow pulses is included among conditions of said flow pulses.

18. (Previously Presented) A magnetic resonance imaging method as in claim 15, wherein distinction between a rephase type and a dephase type of said flow pulses is included among conditions of said flow pulses.

19. (Previously Presented) A magnetic resonance imaging method as in claim 15, wherein said first pulse sequence is repeatedly executed with alterations of conditions of said flow pulses.

20. (Currently Amended) An MRI system for obtaining an MRA image relating to a flowing fluid region of an object to be imaged in the absence of contrast agent in said object said system comprising:

a cardiac phase setting component configured to set a first cardiac phase and a second cardiac phase of a cardiac cycle of the object as first and second timings;

a scanning component configured to perform a first 3D scan at the first timing to acquire a first echo data set and a second 3D scan at the second timing to acquire a

second echo data set, the second 3D scan being performed based on a pulse sequence which has a magnetic gradient flow pulse spatially oriented in the same direction as a phase encoding magnetic gradient pulse ~~direction~~; and

an image producing component configured to produce a subtraction image from a first image and a second image, the first image being generated based on the first echo data set, the second image being generated based on the second echo data set.